

Observations of Comet e 1880 (Swift), made at Dun Echt Observatory with the Filar Micrometer of the 15.06 inch Refractor.

(Communicated by the Earl of Crawford.)

Date.	Dun Echt Mean Time.	$\delta^{\circ} - \star$	$\Delta\alpha$	$\delta^{\circ} \alpha$	$\delta^{\circ} \delta$	Observer.
a 1880, Nov. 7	15 30 19	+ 0 6.87	- 3 5.9	22 45 53.83	+ 42 33 43.3	J. G. L.
b { 9	6 59 37	+ 4 31.27	-	22 57 58.10	"	
c 9	7 27 1	-	8 19.4	-	+ 44 30 41.4	"
d 10	6 10 29	+ 0 37.04	- 8 24.7	23 5 47.14	+ 45 35 54.2	R. C.
e 12	6 59 14	+ 0 48.9	+ 7 41.1	23 24 2.89	+ 47 51 33.2	"
f 19	9 32 42	+ 0 10.24	-	0 48 52.03	-	
g 10 14 6	-	+ 6 39.0	-	+ 53 50 35.3	"	
h 11 41 17	-	- 0 36.45	-	0 50 37.1	"	
i 11 56 37	-	+ 7 10.0	-	+ 53 52 38.9	"	
20	5 58 26	+ 0 29.62	- 7 16.4	1 0 53.66	+ 54 13 12.1	"
24	6 42 43	+ 2 11.58	-	1 59 15.03	-	"
24	7 6 59	-	- 10 45.1	+ 54 52 42.0	"	
i	6 43 25	- 8 2.23	-	- 9 57.8	"	
	7 6 59	-	-	-	"	

Date.	Mean Time.	$\delta - *$			$\alpha\delta$			Observer.
		$\Delta\alpha$	$\Delta\delta$	$\alpha\delta$	δ	α	δ	
K	Nov. 25	7 11 40	+ 0 43.29	- 8 3.8	2 13 31.85	+ 54 43 49.2	J. G. L.	
J	25	7 38 28	+ 1 7.07	- 3 26.7	2 13 47.05	+ 54 43 33.7	"	
u	27	7 54 36	- 1 16.92	- 4 17.4	2 41 3.88	+ 54 6 2.3	"	
n	29	8 32 2		+ 2 35.0		+ 53 5 7.7	"	
		8 33 34	+ 10 5.06		3 6 19.21			
		13 0 37		- 0 0.5		+ 51 39 41.4	"	
		13 26 8	+ 7 2.04		3 30 46.35			
		12 55 10	+ 0 0.22	- 1 14.4				
p	6	8 25 48	- 2 3.78		4 27 25.36			
q	8	8 51 2		+ 9 51.8		+ 46 9 25.2	"	
r	9	12 48 10		- 5 48.3		+ 45 10 39.8	"	
s	1881, Jan. 4	12 14 11	+ 0 31.6	- 3 37.4	4 34 48.98	"		
t	6	13 38 36	+ 0 8.45	- 0 46.4	5 50 45.39	+ 29 20 9.4	"	
					5 53 42.95	+ 28 35 31.4	"	

Adopted Mean Places of Comparison Stars for 1880.

	h	m	s	Red.	Red.	Red.	Red.	Authorities.
<i>a</i>	22	45	43.12	+ 3°84	+ 42° 36' 10.5	+ 38'7	+ 38'7	Lalande (Asten) 44726-7.
<i>b</i>	22	53	22.93	+ 3°90	+ 44° 38' 21.5	+ 39.3	+ 39.3	$\frac{1}{2}$ (Bonn Cat. + 44°4293 + B.W. xxii. 1199).
<i>c</i>	23	5	6.06	+ 4°04	+ 45° 43' 39.3	+ 39.6	+ 39.6	Arg. Oe. 25230.
<i>d</i>	23	23	53.71	+ 4°29	+ 47° 43' 12.2	+ 39.9	+ 39.9	Arg. Oe. 25644.
<i>e</i>	0	48	36.08	+ 5°71	+ 53° 43' 18.2	+ 38.1	+ 38.1	Rümker, N. F. 393.
<i>f</i>	0	50	34.42	+ 5°74	+ 53° 44' 50.9	+ 38.0	+ 38.0	Bonn Cat. + 53°184.
<i>g</i>								μ Cassiop, "Conn. des Temps."
<i>h</i>	1	56	56.61	+ 6°84	+ 55° 2' 54.2	+ 32.9	+ 32.9	Lalande (Asten.) 3757-8.
<i>i</i>	2	7	13.4	+ 6°98	+ 55° 1' 9	+ 31.8	+ 31.8	D. M. + 54°500.
<i>k</i>	2	12	41.52	+ 7°04	+ 54° 51' 21.7	+ 31.3	+ 31.3	Arg. Oe. 2642.
<i>l</i>	2	12	32.95	+ 7°03	+ 54° 46' 29.1	+ 31.3	+ 31.3	Arg. Oe. 2638.
<i>m</i>	2	42	13.45	+ 7°35	+ 54° 9' 51.8	+ 27.9	+ 27.9	Arg. Oe. 3201.
<i>n</i>								γ Persei, Autwers, "Fundamental Catalogue,"
<i>o</i>	3	23	36.78	+ 7°53	+ 51° 39' 19.2	+ 22.7	+ 22.7	Bonn Cat. + 51°744.
<i>p</i>	4	14	40.4	+ 7°54	+ 47° 43' 1	+ 15.3	+ 15.3	D. M. + 47°985.
<i>q</i>	4	29	21.67	+ 7°47	+ 45° 59' 20.2	+ 13.2	+ 13.2	Arg. Oe. 4980.
<i>r</i>	4	39	10.89	+ 7°45	+ 45° 16' 16.5	+ 9.11	+ 9.11	Arg. Oe. 5159.
								Adopted Mean Places of Comparison Stars for 1881.
<i>s</i>	5	50	39.33	+ 2°90	+ 29° 23' 46.5	+ 0.3	+ 0.3	Observed with the Dun Echt Transit Circle.
<i>t</i>	5	53	31.60	+ 2°90	+ 28° 36' 17.8	+ 0.0	+ 0.0	" "

Jan. 1881.

made at the Dun Echt Observatory etc.

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Remarks.

Nov. 7. At 11^h 10^m Dun Echt M. T., this comet was independently found by Mr. J. G. Lohse. Owing to bad weather no exact observation could be secured until 15^h 30^m. Very soon after the last measure, the comet disappeared in the rays of the 5° mag. star D. M. + 4° 45' 21" over which it must have subsequently passed; in the meantime the approaching daylight prevented further observations.

Nov. 10. To the original observation of the comparison star in Bonn Obs. I. p. 94, there is a note that "die Fäden stimmen nicht; sie geben 52° 58' und 53° 34'." Sky very hazy; the last measure of 4 marked very doubtful, but as they all agree fairly, the mean has been taken. The result differs from that in Dun Echt Circular, No. 10, and 4st. Nach. vol. 98, p. 325, by -0° 19' and +3" 0. The result here given is the right one derived from the mean of the computed Δa and $\Delta \delta$. That previously given was obtained by taking the mean of the position angles and distances, a method which may lead to considerable errors when the described angle is large.

Nov. 16, 17, and 18. The comet could not be found owing to strong moonlight.

Nov. 19. The comet was fairly well seen, although the Moon was several degrees above the horizon. The condensation in the middle was tolerably well defined and could easily be measured. The comet did not seem to be perfectly round, but rather a little elongated on the following side.

Nov. 20. Comet perfectly round, considerably brighter in the middle, but without a real nucleus.

Nov. 24. To-day the comet is apparently brighter and more extended than on Nov. 20. Although very diffused and ill-defined it could be easily measured when the sky was perfectly clear.

Nov. 25. Measured with power 122. With 229 the texture of the comet is uneven as compared with a nebula. It has no nucleus, although an area in the centre 20" in diameter is brighter than the rest. Obviously it cannot bear high powers, for it is apparently brighter and larger in the finder (Apert. 3 $\frac{1}{2}$ in.) than in the main telescope. There is no appreciable deviation from the circular form.

Nov. 27. The comet, though decidedly somewhat brighter than on the 25th, remains round and hazy as before.

Dec. 1. No change since Nov. 29. In the 6.06 in. Simms refractor, with a large Kellner eye-piece, the comet appears very large and tolerably bright, but without a nucleus. The diameter is 10° 5', being equal to the distance between D. M. + 51° 7' 57" and 76°. The coma is so faint as only to be visible with very low powers, hence the remarkable result that its *apparent* size decreases with increased magnifying power. Thus, in the 15.06 in. refractor it is seen as a small faintish comet; in the finder it is already considerably larger and brighter, while in the 6.06 in. Simms it is quite a striking, though not very bright object.

Dec. 8. Clouds troublesome.

Dec. 9. Measures easy, the comet being still tolerably bright, considering the already strong moonlight.

1881, Jan. 4. The comet is exceedingly faint and very difficult to measure, as the smallest star involved renders it almost impossible to say where the centre is. The condensation in the middle is very insignificant.

Jan. 6. The comet is so exceedingly faint as only to be recognizable in a perfectly dark field; the measures are in consequence very difficult, All the measures were made with power 122, except on Jan. 6, when power 229 was also used. Each result is based on at least four comparisons. Observers, Ralph Copeland and J. G. Lohse.

Dun Echt Observatory,
1881, Jan. 13.